

71044



DEPARTMENT OF THE NAVY
NAVAL AIR SYSTEMS COMMAND
NAVAL AIR SYSTEMS COMMAND HEADQUARTERS
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ARLINGTON VA 22243

IN REPLY REFER TO

NAVAIRINST 5400.127A
AIR-1002
21 Jul 94

NAVAIR INSTRUCTION 5400.127A

From: Commander, Naval Air Systems Command

Subj: DESIGNATION OF THE AIR COMBAT ELECTRONICS PROGRAM

Ref: (a) DODD 5000.1 of 23 Feb 91, Defense Acquisition (NOTAL)
(b) DODM 5000.2-M of 23 Feb 91, Defense Acquisition
Management Documentation and Reports (NOTAL)
(c) DODI 5000.2 of 23 Feb 91, Defense Acquisition
Management Policies and Procedures (NOTAL)
(d) SECNAVINST 5000.2A, Implementation of Defense
Acquisition Management Policies, Procedures,
Documentation, Reports (NOTAL)
(e) NAVAIRINST 5400.1B, Naval Air Systems Command
Headquarters Organization Manual (NOTAL)
(f) NAVAIRINST 1611.1G, Submission of Fitness Reports
(NOTAL)

Encl: (1) Charter for the Air Combat Electronics Program Manager
Air (PMA209)

1. Purpose. To issue a revised charter (enclosure (1)), and a title change from the Common Avionics Program to the Air Combat Electronics (ACE) Program. The ACE Program is a designated program under direction of the Commander, Naval Air Systems Command (COMNAVAIR). Enclosure (1) provides the program's description, scope, operating relationships, organization, resources, and the authority and responsibility of the program manager (PM).

2. Cancellation. This instruction supersedes NAVAIR Instruction 5400.127 of 1 April 1988. Since this is a major revision, changes are not indicated.

3. Background

a. Effective 22 April 1986, the Common Avionics Program was designated under direction of COMNAVAIR as Air Program Coordinator (APC209).

b. Effective 9 May 1988, COMNAVAIR elevated APC209 to Program Manager Air (PMA) status (PMA209).



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c. Effective 22 June 1988, COMNAVAIR transferred management responsibilities for all Combat Identification Systems from PMA209 to the Air Traffic Control and Landing Systems Program (PMA213).

d. The Materiel Professional Standing Board designated PMA209 as a Major Program with a tenure of 3 years vice 4 years, 27 August 1991. The Assistant Secretary of the Navy, Research, Development and Acquisition approved the designation, 6 September 1991.

e. Effective 26 August 1993, COMNAVAIR transferred production management responsibilities for specified common avionics equipment from the Production Management Division (AIR-114) to PMA209. Two AIR-114 billets are collocated within PMA209 for this effort.

f. By release of this instruction, COMNAVAIR approves PMA209 as the Program Team with life cycle management responsibilities of ACE systems in the areas of communications, navigation, flight mission information, and flight avionics systems.

g. COMNAVAIR approved a title change from the Common Avionics Program to the ACE Program, effective 7 June 1994.

4. Action

a. The PM will continue to execute program management responsibilities, by references (a) through (f), enclosure (1), and other applicable directives issued by higher authority.

b. The PM reports directly to the Deputy Commander for Acquisition and Operations (AIR-01).

c. PMA209 will coordinate efforts with other PM's within the Naval Air Systems Command (NAVAIR), and naval aviation Program Executive Officer (PEO) organizations. When appropriate, this effort will extend to other systems commands, PEO organizations, and Direct Reporting Program Managers.

d. The NAVAIR functional groups will support the PM as specified in references (d) and (e), enclosure (1), and other applicable directives issued by higher authority.

5. Review. The Acquisition and Program Policy Support Branch (AIR-1002) shall review annually the contents herein and provide recommendations for changes and deletions.

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6. Approval. The charter for the ACE Program (enclosure (1)) is hereby approved.



W. C. BOWES

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CHARTER
FOR THE
AIR COMBAT ELECTRONICS PROGRAM MANAGER AIR (PMA209)

1. Introduction

a. This charter provides the authority and responsibility for the Air Combat Electronics (ACE) Program Manager Air (PMA209); and defines the program's description, scope, operating relationships, organization, and resources.

b. The ACE Program will be conducted following management principles identified in references (a) through (f), this charter, and other applicable directives issued by higher authority.

2. System Description. The ACE Program includes systems in the areas of communications, navigation, flight mission information, and flight avionics systems. PMA209 is responsible for ACE systems excluding systems and equipment for electronic warfare, life support, and anti-submarine warfare missions, or as designated to another PMA. Programs assigned to PMA209 and their description are listed in appendix A of this enclosure.

3. Scope

a. The scope of the ACE Program consists of the definition, demonstration, development, test and evaluation, acquisition, initial support, life cycle support, readiness improvement, re-use and disposal from inventory of designated ACE systems. This includes components, spares, repair parts, and all supporting technical documentation.

b. Funds listed in the Future Years Defense Plan and assigned to the program manager (PM) for obligation in the execution of program objectives include the following:

(1) Operations and Maintenance, Navy;

(2) Aircraft Procurement, Navy; and

(3) Research, Development, Test and Evaluation, Navy, program elements 0604203N, 0204163N, 0604574N, and 0604504N.

c. Programs under responsibility of the PM are acquisition categories III and IV.

d. The PM's billet (CAPT, USN (06)) is equivalent to a major command.

4. Authority and Responsibilities

a. The PM is the single central executive responsible for managing the program and accomplishing objectives stated in this charter. The PM will be assisted by the Deputy PM who will be in an acting capacity during absence of the PM. By references (a) through (e), the PM has broad directive authority within the scope of the program to plan, direct, control, and use resources not only for approved programs, but also for related in-house and contractor efforts. This includes assigning responsibility, as appropriate, to the various Naval Air Systems Command (NAVAIR) functional elements within the overall framework outlined in references (d) and (e). As the responsible executive, the PM will act on initiatives which affect the program. When actions are required beyond the authority granted in this charter, the PM will refer the action to the Deputy Commander for Acquisition and Operations (AIR-01) with recommendations, including alternatives available.

b. When conflicts exist between program and functional policies, actions directed by the PM will be continued until final resolution.

c. Following reference (f), the PM is authorized to prepare and sign fitness reports (FITREPs) for all military personnel (junior to the PM) assigned to PMA209. The PM may submit concurrent FITREPs on military personnel (junior to the PM) from functional groups, supporting PMA209. Under the authority of this charter, the PM is authorized to submit performance evaluations on civilian personnel assigned to the program office, and other civilians supporting the program from functional areas.

d. When an official above the PM exercises decision authority on program matters, the decision will be documented and a copy forwarded to AIR-01, as official program direction to the PM. The official making the decision will be held responsible, following reference (d).

e. The PM's primary mission, as executive agent for providing management responsibilities for ACE systems, is to provide fully developed, supportable, and reliable systems to the operating forces which will satisfy approved operational requirements and coordinated program management.

f. The PM is the principal United States Navy (USN) member of the Joint Services Review Committee on Avionics Standardization (JSRC-AS). The PM coordinates with the JSRC-AS to optimize joint opportunities for development, test and evaluation, and acquisition.

g. General responsibilities of the PM include:

(1) Financial management support for ACE systems, including budget formulation, justification, defense, and execution of funds.

(2) Timely planning, exploration, development, design approval, production, and life cycle support of common avionics.

(3) Execution of lead systems command (SYSCOM) responsibilities for naval aviation Program Executive Officer organizations; Direct Reporting Program Manager; NAVAIR; other SYSCOM's/activities, as applicable.

(4) Ensure equipments are standardized to ensure interoperability and minimize operating and support costs.

5. Limitation of Authority

a. The PM does not have authority to deviate from policy established by higher authority.

b. Communication, action, or inaction in any form which contractors may interpret as direction will be conducted only by an appropriately assigned contracting officer.

6. Relationships to Chartering Authority. The PM receives authority from and is responsible and accountable to the Commander, Naval Air Systems Command (COMNAVAIR) for discharge of COMNAVAIR's responsibility for the ACE Program. Effective 1 August 1991, COMNAVAIR delegated program executive acquisition authority to AIR-01 for PMA209, and all other NAVAIR assigned PMAs. The PM reports directly to AIR-01 and is responsible for: ensuring commonality, inter-operability, and multi-platform integration for the warfare/mission area; monitoring and evaluating the mission performance of the program, making recommendations as appropriate; and advising AIR-01 of program status.

7. Specific Interface and Operating Relationships. Following the guidance of references (a) through (e), the PM will accomplish the following:

a. Coordinate appropriate interface segments of the program with other PM's and SYSCOM's to ensure a totally coordinated effort and overall systems integration. Coordinate requirements, technical design, and budgetary issues with the Office of the Chief of Naval Operations (OPNAV) staff. Coordinate training and deployed system performance with the designated unified and specified commanders and their component commanders, as appropriate.

b. Respond to Defense Security Assistance Program (DSAP) requirements. The PM will provide overall initiation, guidance, and coordination of USN and United States Marine Corps (USMC) efforts in logistically supporting and sustaining incountry inventory of ACE systems, when applicable. The PM will ensure all DSAP efforts are performed by established procedures. The PM will maintain close liaison with the NAVAIR Defense Security Assistance Division (AIR-103), and the Navy International Program Offices.

c. Maintain active liaison, via chain of command, with the cognizant Requirements Officers in OPNAV, Joint Chiefs of Staff, and the Assistant Secretary of the Navy (Research, Development and Acquisition), as appropriate and following the Navy Programming Manual. The PM will keep these individuals informed of status and progress of the programs through formal and informal communication.

d. Establish appropriate requirements for, and monitor the acquisition of special or additional facilities necessary to support test, evaluation, installation, operation and maintenance of ACE supporting devices. PMA209 will ensure that facilities planning factor criteria are developed with Naval Facilities Engineering Command Headquarters (NAVFACHQ Code 200) representatives and published in the NAVFAC P-80. The PM will inform participating organizations of requirements for new facilities and for modifications to existing facilities in order for planning, programming, and construction schedules to be responsive to ACE systems requirements.

e. Keep the Office of the Vice Commander (AIR-09), Military Affairs Officer (AIR-09X) informed of military personnel requirements.

f. Continually review operational requirements, inventory objectives, and the status of ACE technology. Ensure timeliness, accuracy, consistency and compatibility with program plans and funding availability. Based on assessments of cost, schedule, and risk, provide higher authority options for ACE improvements, as required.

g. Maintain a continuing review of logistic support provided by participating organizations to ensure the support is compatible with approved program and operating objectives.

h. Ensure all test and evaluation master plans are prepared as detailed in references (b) and (c). The PM will maintain liaison with cognizant personnel at the NAVAIR test and evaluation activities during developmental test and evaluation, and will keep AIR-01 informed on readiness of the system(s) for operational evaluation and fleet use. The PM will maintain

active liaison, via chain of command, with cognizant personnel in OPNAV, Operational Test and Evaluation Force, and the Office of the Secretary of Defense on the operational test and evaluation of ACE systems. When concurrent evaluations (technical and operational) are conducted, the PM will ensure that NAVAIR's responsibilities for the technical phases are coordinated and accomplished. Contractor test and demonstrations will be performed, following original and follow-on contracts, and by other established procedures.

i. When necessary, draw on resources of functional organizations throughout the Naval Aviation Systems Team in order to meet required milestones, by established procedures. When conflicts occur the PM will continue to execute the program, pending resolution.

j. Provide direction, advice, and assistance to participating organizations to ensure planning, procurement, and timely deliveries of equipment in support of the ACE Program.

k. Assess periodically the readiness condition of ACE equipment. When material readiness is unsatisfactory, the PM will initiate corrective actions within the scope of the resources available to the program and coordinate other actions, as necessary, to correct unsatisfactory readiness.

l. Direct development and procurement of ACE equipment, technical documentation, training equipment and devices, as required, through contractors and appropriate USN logistics support activities. Requirements of the PM will be given maximum support in development of total command requirements. Concurrence of the PM on program requirements will be obtained prior to budgetary submissions. PMA209, through its Assistant PM for Logistics, and other appropriate activities will provide Navy follow-on and replenishment support for the items indicated in this subparagraph.

m. Serve as the command primary point of contact with higher authority and fleet users in determining ACE requirements, for all USN and USMC aircraft.

n. Represent the USN in coordinating with other U.S. armed services and civilian agencies, foreign governments including those allied by treaty with the U.S. Government (North Atlantic Treaty Organization, and other organizations) on matters associated with ACE Program agreements, involving foreign aircraft and facilities, ashore or afloat.

o. Act as the NAVAIR representative for the program, including the submission of written and oral reports to higher authority on significant accomplishments, trends, problems, and corrective actions.

8. ACE Programs. Appendix A of this enclosure provides current designated ACE programs (development, production, and life cycle support) managed by PMA209.

9. Program Staffing and Organization. The ACE Program Office will function under direction of the PM. The organization and staffing requirements are provided by appendix B of this enclosure.

10. Participating Organizations

a. NAVAIR Headquarters (NAVAIRHQ). All elements of NAVAIRHQ will support the PM, following references (d) and (e) and other established directives. The PM is authorized direct liaison with all NAVAIRHQ divisions and directorates in the exercise of responsibilities. NAVAIRHQ key manpower resources are provided by appendix C of this enclosure.

b. Field Activities. Activities participating in the execution of the programs are listed in appendix D of this enclosure. Additional activities will be added as approved by higher authority. Direct liaison with all activities concerned with the program is authorized. Under the PM's guidance, formal work assignments to NAVAIR field activities will be coordinated with appropriate functional organization(s) in NAVAIRHQ.

c. Non-NAVAIR Organizations. Assignments to activities not under NAVAIRHQ control will be coordinated with cognizant NAVAIRHQ organizations. When applicable, the PM will establish Memoranda of Agreement/Memoranda of Understanding, or other forms of agreement between NAVAIR and non-NAVAIR activities. All agreements will be coordinated with AIR-01, via the Configuration Management, Program Policy and Resources Division (AIR-100), and other applicable NAVAIR codes.

d. Administrative Support. PMA209 will be administratively supported by NAVAIRHQ. This support will include military personnel services, space allocations, security, communications, and other services. Coordination of civilian personnel services administered by the Human Resources Office, Crystal City, Arlington, VA will also be provided.

e. SYSCOM's. SYSCOM's will provide support to the PM, by established procedures and as appropriate.

11. Congressional and Public Information. COMNAVAIR is responsible for coordinating and disseminating public information on ACE programs within the Department of the Navy, to legislative bodies, industry, and the general public. This responsibility has been delegated to the NAVAIRHQ Congressional Liaison Office

(AIR-07C) for Congressional inquiries, and the Public Affairs Office (AIR-07D) for news media or other public inquiries.

12. Resources Assessment

a. The PM will evaluate and document the effect of proposals to increase or decrease the resources authorized to execute the program and will determine the effect of proposed changes on approved cost, schedules, procurement plans, and performance objectives. The PM's evaluation will be considered by the officials having final decision authority during programming, reprogramming, and budgeting deliberations.

b. The OPNAV Requirements Officer(s) will be informed, via the chain of command, in any situation where the requirements of the program cannot be completed within the resources and time available.

13. Program Transition or Disestablishment. The PM will review the programs assigned to PMA209 periodically to determine if objectives have been accomplished. If the review indicates objectives have been completed, or are near completion, the PM will develop a transition plan to ensure a smooth disposition of remaining resources, responsibilities, and functions.

DEVELOPMENT PROGRAMS

Communications

1. ARC-210 (Preplanned Product Improvement (P3I)). The ARC-210 was designed for growth capability. The current plans are to embed the following capabilities: interface with Link 4 and 11 data terminals, demand access, multiple access satellite communications (DAMA SATCOM), low probability of intercept (LPI), and the downed aircrewman locating system (DALS) waveform.

Navigation

1. Standard Compass/Attitude Heading Reference System (SC/AHRS). An all attitude inertial reference sensor providing outputs of heading and attitude (roll, pitch, azimuth) which will use aircraft standard power. It will interface with the existing and planned avionics systems, via the current analog interface and a Military-Standard (MIL-STD)-1553B data bus. The SC/AHRS will provide compass functions by sensing magnetic north and providing a gyro stabilized magnetic heading and free gyro heading; and is the primary heading reference for helicopters.

2. Embedded Global Positioning Systems (GPS) Inertial Navigation System (EGI). Provide full Precision Position System GPS/Inertial Navigation System embedded capability for joint service use in Department of Defense combat aircraft (United States Air Force Common Avionics has lead service role).

3. Improved Standard Attitude Heading Reference System (ISAHRS). Provides attitude and heading for rotary aircraft and T-45 and safety of flight backup for fixed wing aircraft with inertial navigation systems.

Flight Avionics

1. Low Probability of Intercept Altimeter (LPIA). Provides radar or laser altitude for manned and unmanned aircraft. LPIA greatly reduces susceptibility to enemy detection/exploitation, improves altimeter accuracy and altitude determination time and incorporates pitch and roll operational capability, while minimizing integration impacts.

2. Naval Air Collision Warning System (NACWS). Reduces risk of mid-air collision for T-34 aircraft by providing a warning of 10 to 15 seconds prior to protection zone penetration.

DEVELOPMENT PROGRAMS (Con't.)

Flight Avionics (Con't.)

3. Solid State Barometric Altimeter (SSBA). Displays pressure altitude to aircrews using digital liquid crystal display and night vision goggle (NVG) components.
4. Ground Proximity Warning System (GPWS). GPWS will provide voice warnings of impending controlled flight into terrain (CFIT). This is accomplished through the integration of existing aircraft sensors.
 - a. Category II - Tactical Aircraft (TACAIR).
 - b. Category III - Helicopter.

Mission Information

1. Advanced Mission Processor (AN/AAYK-14). AN/AAYK-14 develops standard modules to include digital map, voice input/output module, high speed data bus, video display processor using open system architecture and commercial standards.
2. Common Mission Tactical Recorder System. The Common Mission Tactical Recorder System will incorporate an airborne digital, video, and flight incident recording system and a ground based data transfer and distribution system. This system will provide the capability to record mission flight data, engine and structural data, weapons data for mission reconstruction and crew de-brief on the ground. The flight incident recorder will provide vital flight data to the United States Navy (USN) Safety Center for incident and accident reconstruction. The video system will provide video from the Heads Up Display, various mission displays and weapons video for intelligence collection and news release.
3. Tactical Aircraft Moving Map. Develops common hardware and software digital map system for TACAIR and provides growth capabilities for future digitization of the battlefield.

PRODUCTION PROGRAMS

Communications

1. AN/ARC-182. Current operational ultra high frequency/very high frequency (UHF/VHF) radio used by the USN and the United States Marine Corps (USMC) airborne platforms.
2. AN/APX-100. Mark XII compatible Identification Friend or Foe (IFF) transponder for multiple service aircraft applications.
3. AN/ARC-210. The ARC-210 is an electronic counter-countermeasures (ECCM) combination radio used by tactical USN/USMC fixed and rotary wing aircraft. ECCM is interoperable with other service ground and airborne ECCM radios. ECCM replaces existing single band radios, provides HAVEQUICK for aircraft using MIL-STD-1553B control, has improved ranges in low VHF and provides for growth with advanced capabilities.
4. AN/ARS - 6(V) Downed Aircrewman Locating System (DALSL). Locates downed aircraft and aircrew in benign and hostile environments. DALSL is interoperable with the improved personal locator beacon, AN/PRC-112 emergency survival radios, and crash position locator equipment.

Navigation

1. Carrier Aircraft Inertial Navigation System (CAINS II). Provides self-contained, non-jammable velocity, attitude, and heading information for navigation, flight control, and weapons delivery.
2. AN/APN-217. Standard doppler vertical flight recorder which transmits continuous wave; measures doppler shift; and calculates heading, drift, and vertical velocities.
3. Standard Attitude Heading Reference System (SAHRS). Provides attitude and heading for rotary aircraft and T-45; and safety of flight backup for fixed wing aircraft with inertial navigation systems.

PRODUCTION PROGRAMS (Con't.)

Flight Avionics

1. Standard Central Air Data Computer (SCADC). Provides attitude, airspeed, angle of attack for navigation, flight control and weapon delivery.
2. GPWS For Patrol Aircraft (Category I). GPWS provides voice warnings of impending controlled flight into terrain. This is accomplished through the integration of existing aircraft sensors.

Mission Information

1. Standard Airborne Mission Computer (AN/AYK-14). General purpose airborne digital computer tailored to wide user base including majority of current operational USN aircraft. Incorporates common modular architecture for future improvements.
 - a. BASIC. Original system for multiple airborne platforms.
 - b. Preplanned Product Improvement (P3I). P3I expanded the processing capability of the computer.
 - c. Very High Speed Integrated Circuit (VHSIC) Upgrades. Increased P3I memory and speed with reduced weight and procurement costs. Requires no changes to existing user software.

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LIFE CYCLE SUPPORT PROGRAMSCommunications

1.	SA-1474A/A	Switch Interference Unit, Lobing
2.	APX-72	Transponder, IFF
3.	ARC-115	VHF-AM Radio Set
4.	ARC-38A	HF (High Frequency) Liaison Radio Set
5.	ASW-25A	Digital Data Communications Set
6.	ARR-41	Radio Terminal Set
7.	ARC-94	Radio Set
8.	C-6280 (P) /APX	Control Transponder
9.	TS-1843/APX	Transponder Test Set
10.	AIC-37(V)	Intercom System Digital Communication Management System
11.	ARC-134	VHF Radio Set (VHF-101)
12.	ARC-102	HF Radio Set
13.	ARC-84	VHF Radio Set
14.	AGC-9(V)	Teletypewriter Group
15.	ARC-114	Radio Set, VHF/FM
16.	ARC-131	Receiver, Radio
17.	APX-25	IFF Radar Set
18.	ARN-67	Radio Receiver
19.	UYQ-3()	Communications Set
20.	APX-76	Interrogator Set, IFF
21.	APX-76(V)	IFF Interrogator Set
22.	ARC-159	UHF Radio Set
23.	ARC-51A	UHF Radio Set
24.	ARR-69	Radio Receiver
25.	ARC-52	UHF Radio Set
26.	AIC-10	Intercom Set
27.	SA-521()/A	Radio Frequency (RF) Transmission Line Switch
28.	APX-100(V)	IFF Transponder Set
29.	ARC-186(V)	VHF AM/FM Radio Set
30.	APX-64	Radar Set, IFF
31.	ARC-73(V)1	Radio Set (VHF-101)
32.	ARR-40	Radio Receiver
33.	C-6533/ARC	Intercom Set
34.	C-2379/AIC	Intercom Station Control
35.	ARC-190	Airborne HF Communications System
36.	ARC-199	HF Radio Set
37.	618M-2D	VHF Radio Set
38.	TDR-90	IFF Transponder

LIFE CYCLE SUPPORT PROGRAMS (Con't.)

Communications (Con't.)

39.	VHF-20B	VHF Radio Set
40.	ARW-73	Radio Set, Transmitting
41.	ARC-175	VHF Radio Set
42.	AIC-18	Intercom Set
43.	AIC-13	Intercom Set

Navigation

1.	APN-153	Navigation Set, Doppler
2.	ARN-52	Tactical Air Navigation (TACAN)
3.	ARN-84	TACAN
4.	ID-387	Course Indicator
5.	A/A24G-9	True Airspeed Set
6.	ML-1	Compass Transmitter
7.	SCR-718	Series Radio Set
8.	APN-70B	Long Range Aid To Navigation Receiving Radio
9.	ARN-105	TACAN System
10.	ARN-83	Radio Direction Finder Set
11.	MD-1	Vertical Gyro
12.	MHRS	Magnetic Heading Reference System
13.	ASN-41	Navigation Computer Set
14.	ARD-13	Automatic Direction Finder (ADF) Set
15.	ASN-124	Navigation Display Set
16.	ASN-75	Gyro Reference Compass
17.	51Z-2/3	Marker Beacon
18.	APN-154	Radar Beacon
19.	APN-202	Beacon Set, Radar
20.	APN-59/B	Radar Set
21.	ASN-43	Magnetic Compass Gyro
22.	B and D 2504	Target Acquisition System (TAS) Indicating System
23.	51V-1/2/3/4	Glide Path Receiver
24.	51Z-4	Marker Beacon System
25.	APA-52	Doppler Radar Navigation Set
26.	APN-147(V)	Doppler Navigation System
27.	ARN-14/A/B/E	VHF Omnidirectional Range (VOR) Receiver (Flight Controlled Pods)

LIFE CYCLE SUPPORT PROGRAMS (Con't.)

Navigation (Con't.)

28.	ASN-35	Navigational Computer System
29.	C-12	Compass System
30.	FD-109()	Flight Director Computer
31.	APN-182	Radar Navigation Set
32.	ARN-21	TACAN Set
33.	ARN-32	Marking Beacon Receiver
34.	ARN-59	Direction Finder
35.	ASN-123	Tactical Navigation Display
36.	ASN-130(A)	Carrier Aircraft (A/C) Inertial Navigation System
37.	ASN-150	Tactical Navigation Set
38.	ASN-50	Attitude Heading Reference System
39.	ASN-73	Attitude Heading Reference System
40.	ASN-92	Carrier Inertial Navigation System
41.	LTN-72	Inertial Navigation System
42.	APN-122	Navigation Set
43.	ARN-31	Radio Receiving Set
44.	ASN-37	Attitude Heading Reference System
45.	APN-233	Doppler Navigation System
46.	MA-1	Compass System
47.	MB-1	Standby Compass
48.	ARA-25A/B	Direction Finder
49.	ARA-50	Automatic Direction Finder
50.	ARN-18	Glide Slope Receiver
51.	ARN-6	ADF Radio Compass
52.	ID-1329A/A	Attitude Directional Indicator
53.	51Y-4	Low Frequency (LF) ADF Receiver
54.	ARN-126	VOR Receiver
55.	ARN-151(V) ()	Global Positioning System Set
56.	ARN-89	Automatic Direction Finder Set
57.	TAT	True Airspeed Transducer
58.	LTN-51	Inertial Navigation System
59.	AP-105	Automatic Pilot
60.	ARN-139	TACAN
61.	ARN-148	OMEGA Navigation System
62.	ASQ-177(V)	Position Locator and Report System
63.	DF-203	LF/ADF System
64.	DF-206	ADF Direction Finder Set

LIFE CYCLE SUPPORT PROGRAMS (Con't.)

Navigation (Con't.)

65.	ASQ-105	Self Control Navigation System
66.	OA-8697()/ARD	VHF/UHF Radio Directional Finder (DF-301E)
67.	VIR-31A	VOR/Instrument Landing System, Navigation
68.	AJB-7	Attitude Heading Reference System

Mission Information

1.	AJB-3	Loft Bomb Release Computer Set
2.	ASH-20 (V)	Flight Recorder Locator System
3.	AKT-22	Telemetric Data Transfer Set
4.	ASQ-194	Flight Incident Recorder and Monitoring System
5.	ASQ-81 () (V) ()	Magnetic Anomaly Detector
6.	USH-26 (V) ()	Recorder
7.	USH-33 (V) 2	Recorder
8.	IP-1318 () /A	Digital Display Indicator
9.	ID-1318/A	Multipurpose Digital Display
10.	OA-1768/ASA	Plotting Board
11.	APG-53A	Radar Set (TA-4J/Provisions only)
12.	ID-1872/A	Ambient Sea Noise Indicator

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LIFE CYCLE SUPPORT PROGRAMS (Con't.)Flight Avionics

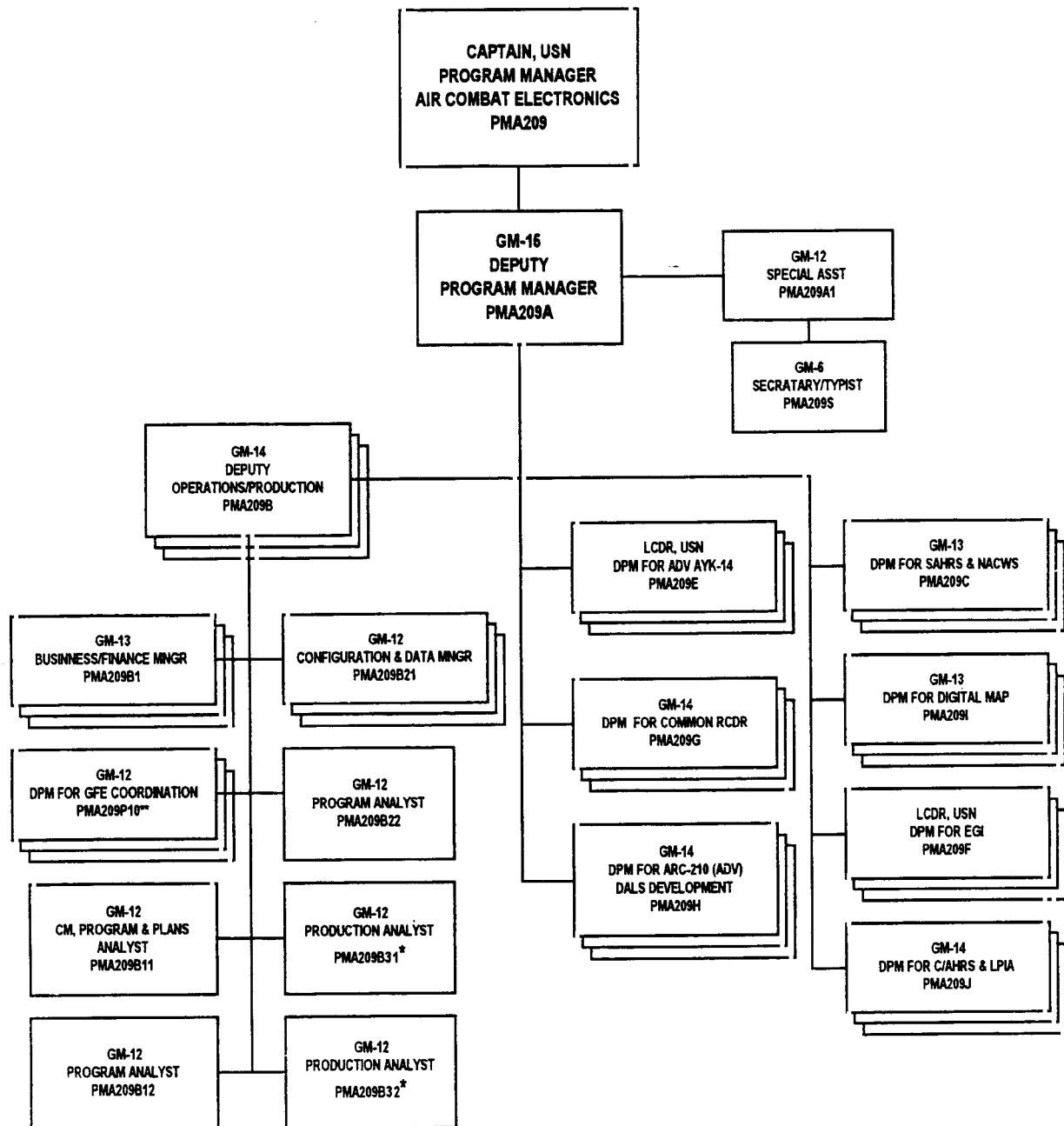
1.	APS-133	Color Weather Radar
2.	AVS-6	NVG Compatible Cockpit Lighting
3.	E-4	Autopilot
4.	APN-133	Radar Altimeter
5.	ASQ-14	Pressurization Kit
6.	ASH-22 (V)	Flight Recorder Locator Set
7.	TRU-161/A	Rate Gyro Transmitter
8.	APQ-107	Radar Altimeter Warning Set
9.	RDR-1300 ()	Weather Radar
10.	PB-20N	Automatic Flight Control System
11.	ID-1481A/A	Vertical Reference Gyro Indicator
12.	APN-141 (V)	Altimeter, Electronic
13.	ASN-54 (V)	Approach Power Control Set
14.	AVK-14	True Airspeed Indicator
15.	AVU-29	Vertical Velocity Indicator
16.	EGU-1	Pressure Indicator
17.	GVR-10	Visual Flying Rules System
18.	ID-1144	Attitude Indicator
19.	ID-1755	Attitude Indicator
20.	ID-663 B/U	Bearing Distance Heading Indicator
21.	IP-1468	Indicator Control
22.	MS-28075-1	Vertical Speed Indicator
23.	MS-28131	Pressure Transmitter
24.	MS-38049	Rate of Climb Indicator
25.	U-21	Attitude Indicator
26.	APN-22	X Band Radar Altimeter
27.	ABU-20/A	Counting Accelerometer Group Indicator
28.	MS-28041-1A	Turn and Slip Indicator
29.	TRU-162/A	Counting Transducer
30.	TRU-79A/A	Induction Transmitter
31.	AAU-19	Altimeter Barometric
32.	AAU-21A	Altimeter Encoder
33.	AAU-24A	Altimeter, Barometric
34.	AAU-39	Altimeter
35.	AAU-3A/A	Altimeter, Cabin Pressure
36.	ABU-4 ()/A	Accelerometer Indicator
37.	CPU-66/A-22	Altitude Encoding Computer
38.	AAU-8/A	Servo Altimeter

LIFE CYCLE SUPPORT PROGRAMS (Con't.)

Flight Avionics (Con't.)

39.	TE-23193	Counting Accelerometer Group
40.	AAU-27/A	Altimeter
41.	ABU-11/A	Clock
42.	AAU-38/A	Altimeter, Cabin Pressure
43.	AOA	Angle of Attack System
44.	AQU-3/A	Magnetic Compass
45.	AQU-5/A	Magnetic Compass
46.	KNI-582	Radio Magnetic Indicator
47.	MM-4	Vertical Gyro Indicator
48.	AL-101	Radar Altimeter
49.	ASH-37	Structural Data Recorder
50.	APN-232 (V)	Combined Altitude
		Radar Altimeter (CARA)
51.	MC-3	Altimeter
52.	CV-3879/A	Signal Data Converter
53.	APN-234	Weather Radar
54.	AVA-1	Vertical Display

AIR COMBAT ELECTRONICS PROGRAM OFFICE (PMA209)

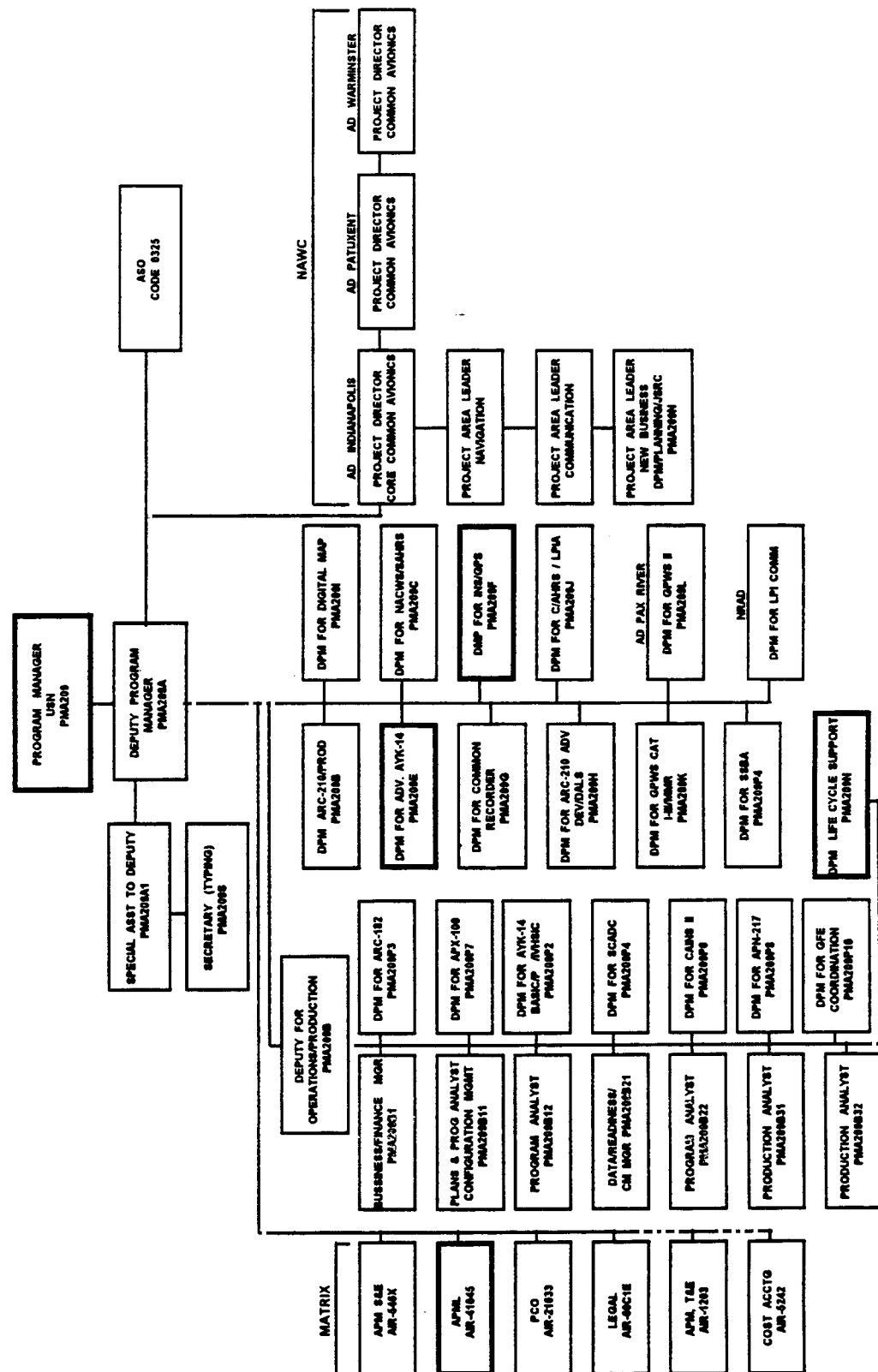


* Collocated from AIR-114

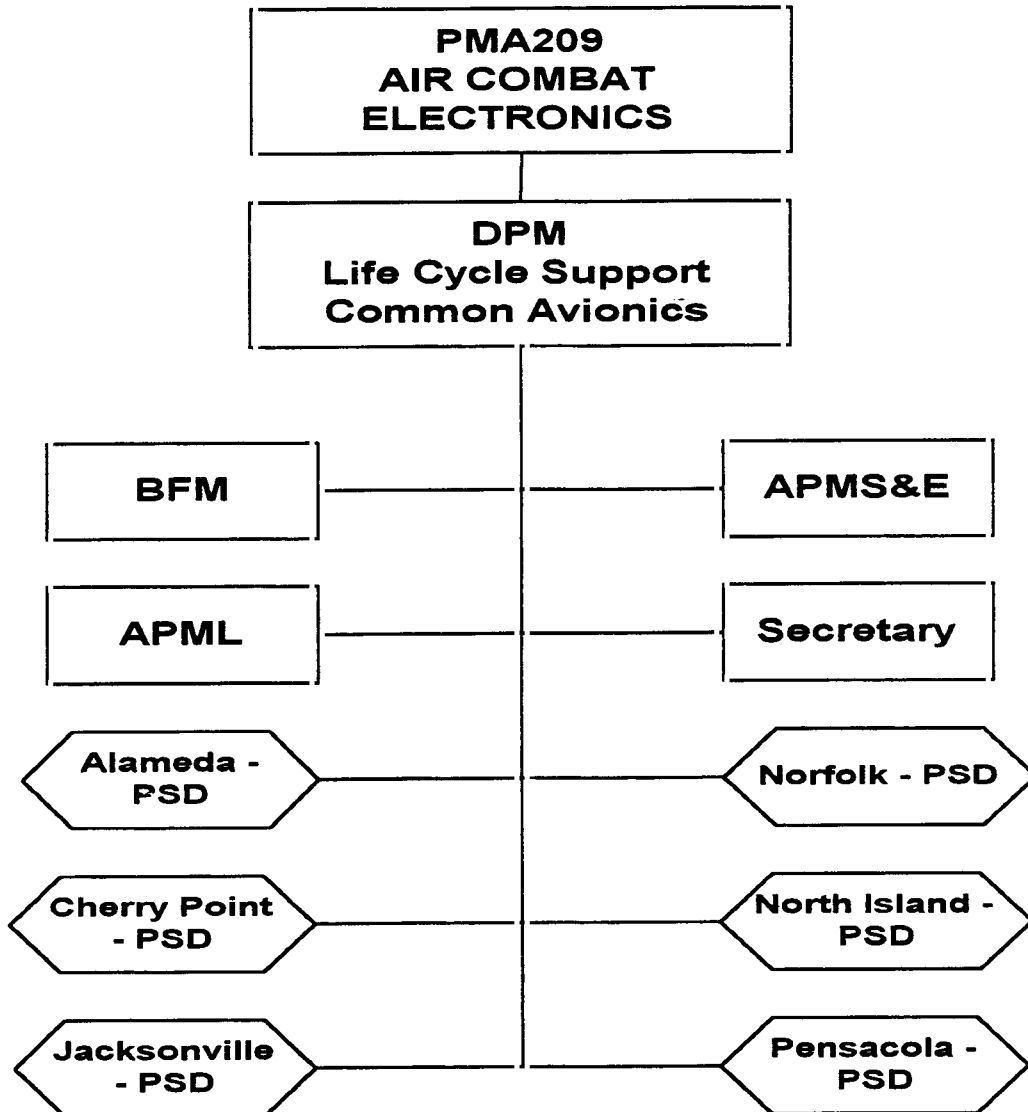
** Collocated from NAWC AD Indianapolis

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AIR COMBAT ELECTRONICS PROGRAM TEAM



AIR COMBAT ELECTRONICS
LIFE CYCLE SUPPORT PROGRAM TEAM



NAVAIRHO KEY MANPOWER RESOURCES

Assistant program Managers/Program Support Offices

<u>TITLE</u>	<u>CODE</u>
Office of Counsel	AIR-00C
Production Management Division	AIR-114
Test and Evaluation Division	AIR-120
Air ASW and Special Mission Programs Contracts Division	AIR-215
Information Resources Management Division	AIR-713
Information Systems Division	AIR-714
Configuration Management, Program Policy and Resource Division	AIR-100
Logistics Management Division	AIR-410
Fleet Support and Resource Management Division	AIR-415
Systems Engineering Management Division	AIR-511
Product Integrity and Production Engineering Division	AIR-516
Cost Analysis Division	AIR-524
Evaluation Division	AIR-522
Warfare Analysis Division	AIR-526
Air Vehicle Division	AIR-530
Crew Systems Division	AIR-531
Avionics System Engineering Resources Division	AIR-546
Research, Development, Test and Evaluation Budget Division	AIR-803
Operations and Manpower Budget Division	AIR-804
Procurement Budget Division	AIR-805

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ACTIVITIES PARTICIPATING IN THE PROGRAM

<u>ACTIVITY</u>	<u>LOCATION</u>	<u>EXAMPLES/ TYPE OF WORK</u>
Naval Air Warfare Center (NAWC) Aircraft Division Indianapolis	Indianapolis, IN	Avionics program management, engineering software support, logistics, procurement and production.
NAWC Aircraft Division Warminster	Warminster, PA	Avionics science and technology (S&T) and development, test and evaluation (T&E).
NAWC Aircraft Division Patuxent River	Patuxent River, MD	T&E.
NAWC Aircraft Division Lakehurst	Lakehurst, NJ	Support equipment.
Operational Test and Evaluation Force	Norfolk, VA	Operational T&E.
Aviation Supply Office	Philadelphia, PA	Spares, spare parts, and support equipment.
Naval Air Technical Services Facility	Philadelphia, PA	Publications, technical data.
Naval Research Laboratory	Washington, DC	Technical studies.
NAWC Training Systems Division, Orlando	Orlando, FL	Trainer systems.
NAWC Weapons Division China Lake	China Lake, CA	Software T&E.

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ACTIVITIES PARTICIPATING IN THE PROGRAM (Con't.)

<u>ACTIVITY</u>	<u>LOCATION</u>	<u>EXAMPLES/ TYPE OF WORK</u>
NAWC Weapons Division Pt. Mugu	Pt. Mugu, CA	T&E for avionics.
Naval Command, Control and Ocean Surveillance Center	San Diego, CA	Communication/ Navigation S&T and development support.
<u>U. S. Air Force</u> Common Avionics Systems SPO ASC/SMA	WPAFB, Dayton, OH	Program Office.
<u>U. S. Army</u> Communications and Electronics Command SFAE-AV-SE	Ft. Monmouth, NJ	Program Office.